

Programme

**Conference of the Italian Photovoltaic
Network for Research, Development and
Innovation**

Catania - Monastero dei Benedettini

11 - 12 June 2026

User: **FOTOVOLTAICO**
 Password:
Unict#2026@fotovoltaico!

Technical Tour - 3SUN e EGP Hub & Lab

14:00 | Independent arrival of registered tour participants
 14:00 - 14:30 | Welcome coffee
 14:30 - 17:30 | 3SUN tour
 17:30 | Transfer to Catania

08:00 - 09:00 | Registration

09:00 - 09:30 | Welcome addresses

09:30 - 10:30 | Tavola rotonda: Il presente ed il futuro per la produzione fotovoltaica in Italia

10:45 - 11:15 | La visione e la strategia della Rete Italiana Fotovoltaico per la Ricerca e l'Innovazione

11:15 - 11:30 | Coffee break

11:30- 11:45 | Sponsors greetings and presentations

11:45- 12:15 | Keynote - Véronique CARRON, CEA-Liten, CEO

12:15 - 13:15 | Oral session 1

Topic 1 - Fundamental science and proof of principles

5 minutes presentations or 12 min. presentation + 3 min. Q&A

5 min

Elisa Fabbretti

University of Milano-Bicocca

Highly Transparent TiO₂ Deposited via ALD as ETL for Semi-Transparent PSCs

15 min

Luana Mazzarella

Delft University of Technology

Vacuum Deposition Strategies for Perovskite Tandem Photovoltaic

15 min

Fabrizio Lovisetti

University of Padova

Investigating the effect of 20 equivalent years of light exposure on SHJ solar cells: contributions of visible and UV light

15 min

Giuseppe Bengasi

3SUN

Tandem development in 3SUN

5 min

Martina Pelle

EURAC Research

Coloured Photovoltaic Mini-Modules with Dye-Doped Encapsulants: Fabrication, Characterisation and Accelerated Ageing Tests towards Technology Scale-up

13:15 - 14:30 | Networking lunch

and poster installation

14:30 - 15:30 | Oral session 2**Topic 2 - PV components, systems and applications****Topic 3 - PV value chain, socio-economic aspects and sustainability***5 minutes presentations or 12 min. presentation + 3 min. Q&A***Topic 2**

5 min

Giorgio Pastore

SoliTek

Structural Durability and Performance Overview o..f PV Noise Barrier Projects in Lithuania / Italy

5 min

Tommaso Michelin

University of Padova

Long-Term Performance Evaluation of Multi-Crystalline PV Modules

5 min

Giovanni Morana

STREAM Group Srl

AI-driven Digital Twin for Advanced PV Monitoring and Operational Optimization: the SolarStream project

5 min

Ali Sohani

University of Rome Tor Vergata

Shadow Effect on Sensors and PV Plant: Agrivoltaic Greenhouse Case-Study**Topic 3**

5 min

Elena Sparaciari

CNR-IMEM

From Trash to Reuse: Innovative and Ultra-Low Cost Room Temperature Approach for Selective Si Recovery From Different Types of Wasted Solar Cells Towards Different Possible Second-Life Applications

15 min

Giulio Mela

RSE Ricerca Sistema Energetico

The Socio-Economic Impact of PV Module Manufacturing Plants in Italy

5 min

Muhammad Shoaib

University of Salerno

Silver lean TOPCon metallization design: Implications for High-Efficiency module level Tandem Architectures

15:40 - 16:40 | Oral session 3**Topic 2 - PV components, systems and applications***5 minutes presentations or 12 min. presentation + 3 min. Q&A*

15 min

Leonardo Micheli

Sapienza University of Rome

Temperature and Heatwave-Driven Performance Losses in European Photovoltaic Systems

15 min

Antonino Laudani

Università degli Studi di Firenze

Power Conversion Architectures For Heterogeneous PV Systems: State-of-the-Art and a Novel Supercapacitor-Based Strategy

5 min

Salvatore Antonino Lombardo

CNR-IMM

Design, Implementation, and Outdoor Performance of MPPT DC-DC Converters for Bifacial PV Modules

15 min

Sandra Gallmetzer

Eurac Research

Curtailment risk index for grid-friendly design of PV systems

5 min

Gaetano Calise

ETA-Florence Renewable Energies

Designing agrivoltaic systems tailored on the local landscape agri-environmental systems: a frontrunner consultancy approach in Italy**16:50 - 17:50 | Oral session 4****Topic 1 - Fundamental science and proof of principles****Topic 2 - PV components, systems and applications***5 minutes presentations or 12 min. presentation + 3 min. Q&A***Topic 1**

5 min

Federica Scardaci

University of Catania and 3SUN

Scalable Pathways from Lab to Industry: Blade and Slot-die Deposition Enabling Next-Generation Perovskite Tandem PV

15 min

Elisa Nonni

SunXT s.r.l.

Facile strategies to enhance stability in 4 terminal perovskite silicon tandem applications

15 min

Vincent Barth

CEA

Moisture-induced degradation in silicon heterojunction modules: from mechanisms to reliability enhancement

5 min

Francesco Toniolo

University of Pavia

Engineering Interface Passivation in Perovskite Solar cells: From Molecular Design to Scalable Vacuum Deposition

Topic 2

5 min

Paolo Mariani

CNR-ISM

Toward Reliable Large Area Perovskite Solar Cells: The Need for a Deep Investigation of Encapsulation

5 min

Jessica Barichello

CNR-ISM

Indoor Photovoltaic-Storage Integration via FAPbBr? Perovskite Mini-Modules and Hybrid Aqueous Zinc Batteries

5 min

Daniel Alencar

Universita Delgi Studi di Torino

Engineering Phenothiazine-Based Small-Molecule HTMs for Efficient and Cost-effective Wide-Bandgap Perovskite Solar Cells

18:00 – 19:30

Poster session + coffee break facility

Chiostro di Levante

19:30 – 22.00

Aperitivo sociale

Chiostro di Levante



Poster | Topic 1 - Fundamental research on photovoltaic materials and devices

Irina Gushchina

University of Genova

Sustainable Bottom-Up Fabrication of Semi-Transparent CIGS Microstripe Solar Windows for Building-Integrated Photovoltaics

Anna Lucia Pellegrino

Università degli Studi di Catania

Processing and Phase Stability of CsPbX₃ All-Inorganic Halide Perovskites

Rosa De Troia

University of Naples Federico II

First-principles virtual screening of non-fullerene molecular species as electron transport materials for perovskite solar cells

Noor Ul Ain Ahmed

University of Salerno

Interfacial Charge-Transport Losses in Graphene-Based Inverted Perovskite Solar Cells

Paola Jakuba

University of Padova

Temporal Evolution of Crack-Induced Recombination in SHJ Solar Cells Probed by LBIC

Salvatore Valastro

CNR-IMM

Two-sided Self-Protecting Perovskite Solar Cells for Indoor Vertical Applications

Sara Guerrucci

University of Genoa

Synthesis and Study of Alkali Metal Selenides: Li₂Se, Na₂Se and K₂Se

Khushi Muhammad Khan

University of Catania

Studying and Optimization of TCO/Metal/TCO Multi-Layers for Large Area c-Si Solar Cells

Marco della Noce

ENEA

Innovative Charge Selective Contacts for Cost-effective Crystalline Silicon Heterojunctions Solar Cells

Khushi Muhammad Khan

University of Catania

Design and Optimization of Lead-Free Cs₂AgBi_{0.75}Sb_{0.25}Br₆ Perovskite Solar Cells: A Computational Investigation

**Fabio Butrichi**

Università degli Studi di Milano Bicocca

Preparation and deep characterisation of wet Cu₂MnSnS₄ (CMTS)-based thin films and solar cells

Marilena Carbone

University of Rome Tor Vergata

DES-Templated ZnO Nanoplates as Sustainable Photoanodes for DSSCs: Irradiance-Dependent Behavior

Elisabetta Achilli

RSE Ricerca Sistema Energetico

III-V/Ge step graded buffers for lightweight high efficiency MJ cells

Alessandro Veneri

University of Verona

How the molybdenum process influences the growth of CZTS: a comparative study of different lab-grown and commercial molybdenum substrates

Filippo Annoni

RSE Ricerca Sistema Energetico

Innovative meta-lenses for hybrid CPV/PV module

Radia El Kouissi

University of Siena

Eco-design of Indoor Photovoltaic Devices

Claudia Malerba

ENEA Research Centre Casaccia

Optical Simulations of Tandem Solar Cells Using KSEMAW: Insights for Material and Architecture Optimization

Francesca Menchini

ENEA

IWO and ICO films deposited by RF sputtering for applications in silicon HJ solar cells: a comparison

Andrea Lo Mastro

Università degli Studi di Catania

Nitrogen assisted tailoring of tin oxide charge transport layers

Alessandro Romeo

Università di Verona

CdTe/Si tandem solar cells: a comparison of simulation and experimental results

Filippo Ruggiero

CNR-ISM

Molecular Beam Epitaxy Growth of Fully-Inorganic Perovskite

Angelo Lembo

University of Rome Tor Vergata

Porphyrins as bulk passivating agents for ambient air up-scaling of highly efficient Cs-FAPI perovskite solar modules_The importance of the molecular structure



Aliah El Astal Quirós

Centre for Hybrid and Organic Solar Energy (CHOSE) Tor Vergata

Four-Terminal Perovskite-Silicon Tandem Solar Cells Based on Optimized p-i-n Semitransparent Perovskite Subcells

Eleonora Tomasino

Eurac

Investigation of semi-transparent PV modules with high transmittance to UV radiation for building integration

Benedetta Francine Catalano

University of Naples Federico II

Thermal and Electrical Characterization of Photovoltaic-Thermal Cells in Vacuum: From Terrestrial HV-PVT to Space Applications

Benedetta Francine Catalano

University of Naples Federico II

Towards High-Temperature PV/T: Thermal and Electrical Comparison of Standard and TCO-Engineered Silicon Solar Cells

Chiara Ostendi

University of Rome Tor Vergata

Hybrid evaporation-solution process perovskite deposition for CIGS/perovskite 2-terminal tandem solar cells

Carmen Coppola

University of Siena

Prospective Life Cycle Thinking for Sustainable High-Efficiency Silicon Photovoltaics

Kateryna Bondar

University of Torino

Theoretical Study of Structurally Modified NIR Cyanine Dyes for Dye-Sensitized Solar Cells

Simone Galliano

Università di Torino

Maltodextrin-based hydrogel electrolytes for sustainable dye-sensitized solar cells

Maria Miritello

CNR-IMM

Towards Scalable Dopant-Free Passivating Contacts Using Sputtered MoO_x on Silicon

Roberton Vabres

University of Palermo

Carbon Dot-Enhanced Dye-Sensitized Solar Cells

Giuseppe Calogero

CNR-IPCF

Integration of Resorcinol-Derived Carbon Dots into Y123 Dye-Sensitized Solar Cells: a Sustainable Strategy to Enhance Light Harvesting, Suppress Recombination and Boost Power Conversion Efficiency



Poster | Topic 2 - PV components, systems and applications

Antonino Laudani

Università di Catania

Multimodal Fault Detection In PV Systems for Predictive Maintenance and Reliability Enhancement

Giovanni Arcidiacono

Università degli studi di Salerno

Assessment of Methods of Extracting The Single-Diode Model Parameters for Flexible Cigs Photovoltaic Modules

Valentina Arena

CNR-IMM

Low-Vacuum Proximity-Space Effusion for High-Rate Controlled MAPbI₃ Growth

Riccardo Adinolfi Borea

RSE Ricerca Sistema Energetico

Beyond flat membranes: using cupola and semi-cupola geometries for albedo enhancement and soiling mitigation

Muhammad Affan Khan

Marche Polytechnic University

Physics-Guided Domain Adaptation for Estimating Behind-the-Meter Solar Self-Consumption

Federico Andreozzi

University of Rome Tor Vergata

Experimental validation of firm-PV generation: One-year performance analysis of the "Infinity" prototype

Michela Cecconi

University of Naples Federico II

Passivation strategies of Methylammonium Free Tin-Lead Perovskites

Mario Imperatore

RSE Ricerca Sistema Energetico

Identification of spectral artifacts in halogen-lamp solar simulators for the indoor characterization of photovoltaic devices

Ramiro Dellerba

ENEA

Autonomous Quality Assessment for Floating Photovoltaics



Anna De Girolamo Del Mauro

ENEA

Hybrid Evaporation–Solution Deposition of MA-Free Mixed-Halide Perovskites for Perovskite/Silicon Tandem Solar Cells

Gaetano Mannino

RSE Ricerca Sistema Energetico

Overview of Factors Influencing Photovoltaic Module Hail Laboratory Testing

Vittorio Ferrara

University of Palermo

Design of Fast-Curing Polysiloxane Coatings for One-Step Encapsulation of Perovskite Solar Cells

Francesco Levi

University of Naples Federico II

New Encapsulants Polymers In Photovoltaic Modules

Samaneh Shapouri

Department of Engineering and Architecture, University of Parma, Italy

Numerical Study of Cu₂SbS₂ as a Hole Transport Layer in Thin-Film Solar Cells

Amr Osama Mostafa Mohamed

Università degli Studi di Catania

Analysis of the Thermal Behaviour of Water Basins Partially Covered by Floating Photovoltaic Systems

Alex Sangiorgi

CNR-ISSMC

From spin-coating to inkjet printing: advancing CZTSSe thin-film solar cells toward flexible PV

Grazia Barchi

Eurac Research

Vehicle-to-Grid Integration in PV-based Renewable Energy Communities: An Environmental and Economic Assessment

Noah Tormena

University of Padova

Indoor light spectral management in semi-transparent perovskite BIPV applications

Giovanni Spagnuolo

University of Salerno

An isomorphism-based photovoltaic arrays computation model

Mattia Della Monaca

Sun XT

Fully Inorganic, Buffer-Free SnO₂:Y Electron Transport Layers for Scalable Semi-Transparent p–i–n Perovskite Solar Cells toward 4-Terminal Tandems



Alvaro De Gruijter

Eurac Research

Bridging Design and Performance: A Retrieval-Augmented Generation Approach for BIPV Designers

Rabeb Issaoui

University of Naples Federico II

Boosting the Performance of Tin Perovskite Solar Cells Using Post Treatment

Peter McGuire

Trinity College Dublin

Innovative Cast Glass Surfaces to Improve Visual Appearance and efficiency in BIPV

Giovanni Spinelli

University of Torino

Efficiency-Transparency Trade-off in Dye-Sensitized Solar Cells via Strategic Co-sensitization

Antonino Algozino

E.R.E.I.A. S.R.L.

Use of floating photovoltaics sistem in agro-zootechnics and aquaculture for the production of energy and green hydrogen

Mauro Migliazzi

WE SII SRL

Leveraging Artificial Intelligence and Digital Twins for improving PV hosting capacity and long-term predictive maintenance in power grids.

Mauro Migliazzi

WE SII SRL

Innovations in AI-driven multi-source monitoring and predictive diagnostics for resilient photovoltaic systems

Wi-Fi

User: **FOTOVOLTAICO**

Password: **Unict#2026@fotovoltaico!**

Si raccomanda agli ospiti di visionare e accettare le regole di utilizzo della rete, disponibili ai seguenti link:

- Versione italiana: <https://www.garr.it/it/regole-di-utilizzo-della-rete-aup>
- Versione inglese: <https://www.garr.it/it/chi-siamo/documenti/documenti-garr/3842-acceptable-use-policy-aup-eng-ver-06-11-2017>



Poster | Topic 3 - PV value chain, socio-economic aspects and sustainability

Andrea Danelli

RSE Ricerca Sistema Energetico

Updated Life Cycle Assessment of photovoltaic electricity generation: effects of process energy efficiency and market evolution along the silicon value chain

Mercy Jelagat Kipyator

University of Siena

Life Cycle Assessment as an Ecodesign Tool for Innovative PV: Insights from JUMP INTO SPACE

Paolo Picchi

ETA-Florence Renewable Energies

Testing multi-level CO-design approaches in agrivoltaic systems: learnings from the Symbiosyst research project

Paolo Picchi

ETA-Florence Renewable Energies

Engaging design offices in real projects in BIPV research: the Italian Mission Innovation of Solar Design

Matteo Degani

University of Pavia

Circular recovery of critical components in perovskite solar cells via green solvent processing for high-efficiency and low-impact devices

Wi-Fi

User: **FOTOVOLTAICO**

Password: **Unict#2026@fotovoltaico!**

Si raccomanda agli ospiti di visionare e accettare le regole di utilizzo della rete, disponibili ai seguenti link:

- *Versione italiana:* <https://www.garr.it/it/regole-di-utilizzo-della-rete-aup>
- *Versione inglese:* <https://www.garr.it/it/chi-siamo/documenti/documenti-garr/3842-acceptable-use-policy-aup-eng-ver-06-11-2017>

Friday 12 June

09:00 - 10:00 | Oral session 1

Topic 1 - Fundamental science and proof of principles

Topic 2 - PV components, systems and applications

5 minutes presentations or 12 min. presentation + 3 min. Q&A

Topic 1

15 min

Diego Colombara

Università degli Studi di Genova

(Trying) to Heal Wide-Gap Chalcopyrites

5 min

Filippo Annoni

RSE Ricerca Sistema Energetico

Advancements in HiPIMS Deposition of ZnSnN₂, ZnTiN₂, and Mixing Experiments for tandem solar cells

15 min

Alessandro Veneri

University of Verona

CdCl₂ and MgCl₂ treatments to enhance the performance of CZTSSe solar cells

5 min

Elisa Artegiani

Università di Verona

How the deposition method affects Sb₂Se₃ properties and devices: thermal evaporation vs vapor transport

Topic 2

15 min

Donato Pasculli

Università di Torino

Transparent Organic Redox Mediators for Efficient Dye Sensitized Solar Cells

Wi-Fi

User: **FOTOVOLTAICO**

Password: **Unict#2026@fotovoltaico!**

Si raccomanda agli ospiti di visionare e accettare le regole di utilizzo della rete, disponibili ai seguenti link:

• *Versione italiana:* <https://www.garr.it/it/regole-di-utilizzo-della-rete-aup>

• *Versione inglese:* <https://www.garr.it/it/chi-siamo/documenti/documenti-garr/3842-acceptable-use-policy-aup-eng-ver-06-11-2017>

10:10 - 11:10 | Oral session 2**Topic 3 - PV value chain, socio-economic aspects and sustainability***5 minutes presentations or 12 min. presentation + 3 min. Q&A*

15 min

Giulia Quaranta

Politecnico di Milano

AI-generated landscape simulations for evaluating agrivoltaic integration in rural environments

15 min

Cristina Ventura

University of Catania

A Probabilistic Deep Learning Approach for Short-Term Forecasting of Floating Bifacial Photovoltaic Power Generation

15 min

Pietro Rista

Libera Università di Bolzano

GKN For Future: An environmental and social responsible reindustrialization plan contributing a fair(er) energy transition

15 min

Cristina Polacchi

Eurac Research

Predictive O&M and advanced monitoring for resiliency and resource efficiency in PV systems**11:10 - 11:40 | Coffee break****Wi-Fi**User: **FOTOVOLTAICO**Password: **Unict#2026@fotovoltaico!***Si raccomanda agli ospiti di visionare e accettare le regole di utilizzo della rete, disponibili ai seguenti link:*

- *Versione italiana:* <https://www.garr.it/it/regole-di-utilizzo-della-rete-aup>
- *Versione inglese:* <https://www.garr.it/it/chi-siamo/documenti/documenti-garr/3842-acceptable-use-policy-aup-eng-ver-06-11-2017>

11:40 - 12:40 | Oral session 3**Topic 1 - Fundamental science and proof of principles***5 minutes presentations or 12 min. presentation + 3 min. Q&A*

5 min

Michael Zambrano

University of Naples Federico II

Electronic Structure and Ultrafast Charge Transfer at Di- and Tri-Cation Perovskite/HTL Interfaces: new Insights from DFT Calculations

15 min

Emanuele Smecca

CNR-IMM

High Throughput deposition of MAPbI₃ by Low Vacuum – Proximity Space Effusion for single-junction semitransparent and tandem photovoltaics

5 min

Gennaro Vincenzo Sannino

ENEA

Novel Isoindigo Derivatives As Electron Transport Materials For Perovskite Solar Cells

15 min

Lucia V. Mercaldo

ENEA

Vacuum-based deposition methods of halide perovskites: opportunities and challenges from Pb-based to Pb-free materials

15 min

Marina Ustinova

University of Rome Tor Vergata

Application of Self-Assembled Monolayers as HTLs in Mixed Pb–Sn Perovskite Solar Cells**Wi-Fi**User: **FOTOVOLTAICO**Password: **Unict#2026@fotovoltaiico!***Si raccomanda agli ospiti di visionare e accettare le regole di utilizzo della rete, disponibili ai seguenti link:*

- *Versione italiana:* <https://www.garr.it/it/regole-di-utilizzo-della-rete-aup>
- *Versione inglese:* <https://www.garr.it/it/chi-siamo/documenti/documenti-garr/3842-acceptable-use-policy-aup-eng-ver-06-11-2017>

12:50 - 13:50 | Oral session 4**Topic 1 - Fundamental science and proof of principles****Topic 2 - PV components, systems and applications****Topic 3 - PV value chain, socio-economic aspects and sustainability***5 minutes presentations or 12 min. presentation + 3 min. Q&A***Topic 1**

15 min

Giorgio Tseberlidis

University of Milano-Bicocca

Scalable Flexible Inkjet-printed Kesterite Solar Cells**Topic 2**

5 min

Lucia Mercurio

Unisalento

Advancing Encapsulation for Tin Perovskite Solar Cells with a Room-Temperature Processable and Stable Resin

5 min

Federica Florio

University of Catania

Towards Sustainable Buffer Layers for SHJ Solar Cells through Laser Ablation of Reused Lab Materials

5 min

Gabriella Gonnella

Eurac Research

From Simulation to Prototype: Assessing Emerging BIPV Technologies Through an Integrated IPV Platform and Competence Center

5 min

Hamed Rahbari

University of Rome Tor Vergata

Toward Industrially Scalable Perovskite Solar Cells via Green, Ambient-Air Processing**Topic 3**

5 min

Elena Collino

RSE Ricerca Sistema Energetico

Towards a Resilient Solar Sector: Characterizing Extreme Weather Impacts on Italian Photovoltaics

15 min

Maria Anna Cusenza

RSE Ricerca Sistema Energetico

A Comparative Life Cycle Assessment of Alternative Agrivoltaic System Configurations**14:00 - 15:00 | Lunch**

Chiostro di Levante

Conference Chairs

Marina Foti, 3SUN

Antonio Terrasi, UNICT

Organizing Committee

Andrea Ditta, 3SUN
Marina Foti, 3SUN
Giorgia Franzò, IMM-CNR
Maria Miritello, IMM-CNR

Monica Terranova, 3SUN
Antonio Terrasi, UniCT
Santi Villari, 3SUN

Scientific Board

Alessandra Alberti, IMM-CNR

Salvatore Guastellai, RSE

David Moser, Becquerel Institute

Claudia Barolo, UniTO

Massimo Izzi, ENEA

Paolo Picchi, ETA-Florence

Simona Binetti, UniMIB

Salvo Lombardo, IMM-CNR

Alessandro Romeo, UniVR

Fabrizio Bizarri, EGP

Graziella Malandrino, UniCT

Alessandra Scognamiglio, ENEA

Andrea Danelli, RSE

Giosuè Maugeri, RSE

Giovanni Spagnuolo, UniSA

Paola Delli Veneri, ENEA

Massimo Mazzer, CNR

Antonio Terrasi, UniCT

Aldo Di Carlo, UniROMA2

Matteo Meneghini, UniPD

Giuseppe Marco Tina, UniCT

Marina Foti, 3SUN

Maria Miritello, IMM-CNR

Mario Tucci, ENEA

Angela Grassi, ETA-Florence

Local committee

Stefano Boscarino, UniCT

Federica Florio, UniCT

Andrea Lo Mastro, UniCT

Sponsors

3SUN



emme3
your lab choice

KENOSISTEC



midsummer 

RSE | we move
research



RetelFV 2026 | 11-12 June 2026
Catania, Monastero dei Benedettini